Preparing New Graduate Nurses for the Intensive Care Unit
Growing Our Own

Prepared for the Alaska Nurses Association

By

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Executive Summary

National studies indicate that there is a nursing shortage predicted to hit between 880,000 and 1 million positions nationwide by the year 2020. In Alaska, this shortage is predicted to be approximately 4700 unfilled Registered Nurse (RN) positions 2020. (HRSA, 2004) Like previous nursing shortages, the current shortage is driven by a shift in where and how health care is provided, the increased complexity of health care, an aging population and additional employment opportunities for nurses and for women. The aging population coupled with the current population demographics is driving both the increasing demand and the decreasing supply of registered nurses. This trend is magnified in Alaska; contrary to past time periods, older Alaskans are remaining in the state rather than retiring Outside.

Hospitals across the nation, and here in Alaska, have developed both short term and long term strategies for addressing the shortage of RN’s, including recruiting from outside Alaska, hiring temporary and traveling nurses, voluntary and mandatory overtime policies, and improving the work environment.

Alaska has not been a passive observer of this nursing shortage. In 2002, the University and the health care provides partnered to design and implement a plan to double the number of nurses graduating and increase access to nursing education. They have met their goals. However, studies indicate that the U.S. will not be able to graduate enough nurses to meet the demand, and hospitals report that newly graduating nurses are not adequately prepared for hospital work and in particular, work in specialty units. More nurses are graduating but are not necessarily prepared to work where they are needed.

The Alaska Nurses Association is interested in better preparing these newly graduated nurses for work in the hospital and in particular in the Intensive Care Unit. Specialty care units are predicted to be hardest hit by the nursing shortage: these positions are
historically the hardest to fill, and older nurses are less likely to fill these positions due to the demanding work schedule and heavy work load.

Ten hospitals in Alaska with Intensive Care Units were surveyed regarding whether or not they hire newly graduated nurses and how they prepare their nurses for work in the ICU. Eight of the ten responded. While the vacancy rates for most of these hospitals are near or even above the national average, few are hiring newly graduated nurses. Hospital administrators report that they do not believe the new graduates are prepared for work in the ICU, or they do not believe they can offer enough training and experience to adequately prepare an ICU RN.

In an effort to address the shortage of RN’s, hospitals outside of Alaska have implemented successful strategies aimed at recruiting and retaining newly graduated nurses for their ICU’s. These hospitals and health care organizations are partnering with educational institutions, each other, and state and local departments to provide additional education and training to students and newly graduated nurses to prepare them for work in the ICU. These programs include externships for students, internships for students and new graduates, extended orientation and Preceptoring for new graduates and most recently Nurse Residency Programs for newly graduated nurses. Evaluations of these programs indicate that they result in more highly trained RN’s, lower vacancy rates, and less turnover.

Hospitals in Alaska have demonstrated their ability to develop successful partnerships, and implement successful education and training programs for nurses. Strengthening and expanding these partnerships and implementing additional training programs to bring new graduate nurses into the Intensive Care Units would be the next step to addressing the looming nursing gap.
Problem Statement

Hospitals across the nation are experiencing a shortage of nurses, and Alaska is no exception. Intensive Care Units (ICUs) are especially hard hit due to the level of skills required, and the demographics of the nursing population. The American Association of Critical Care Nurses specifically warns that the impact of this shortage has serious implications for the field of critical care because the sickest patients in the hospital require the highest nurse-to-patient ratio. These critically ill patients are likely to need the attention of the most highly trained nursing personnel (National League for Nursing, 2001). What do hospitals do when they have vacancies in critical care but applicants have minimal or insufficient critical care experience (Cavanaugh, 2005).

In the January/February 2007 issue of Health Affairs, Dr. David I. Auerbach and colleagues estimated that the U.S. shortage of registered nurses (RNs) will increase to 340,000 by the year 2020. A 2004 report by the US Department of Health and Human Services, Health Resources and Services Administration (HRSA) estimates a shortage of more than 1,000,000 nurses by 2020. According to a report from the American College of Chest Physicians, there is a current vacancy rate of 20% among Critical Care Nurses. (Chest. 2004;125:1514-1517.) Hospitals in Alaska are no exception. One national report indicates that by 2020, Alaska will have only 42% of the nurses it needs to provide adequate health care.(RWJF, 2005, p.2). A Health Resources and Services Administration analysis of nursing supply and demand in the US indicates that Alaska will have a shortage of 4700 nurses by 2020.

Since the late 1990’s, there has been a concerted national effort to recruit students for nursing education and to increase the number of nurse graduates as a way of impacting the nursing shortage. In 2002, Alaska developed a forward thinking and aggressive plan to address the predicted shortage. The University of Alaska, Providence Hospital and other
health care providers developed and implemented a plan to double the number of nurses graduating each year. They have almost completely met their goal of increasing the yearly number of graduates from 110-220 (UAA School of Nursing, 2007). Increasing the number of nurse graduates has been a strategy employed across the nation with significant success. Nurse graduation rates have steadily increased an average of 10.5% since 2001 (HRSA, 2004).

There are significant problems with relying solely on increasing the availability of education and the number of nurse graduates. Studies indicate that nursing schools would have to increase the number of nurse graduate by 90% to keep up with national demand. (HRSA, 2004) Nursing schools cannot increase capacity fast enough and are having to turn away qualified applicants because of a lack of faculty. UAA is no exception. Additionally, many hospitals report that nurse graduates are not ready to work in a hospital setting. Hospitals report that they have to spend a great deal of time and money to train new graduates. Some hospitals will not hire new graduates, particularly in specialty departments like the ICU and other specialty care units. Nursing programs report that they are not set up to prepare nurses for every kind of specialty, but rather to provide a general nursing education.
Turnover rates for new graduates are high, increasing the shortages experienced by hospitals. New nurse graduates report that the difference between what they learn in school and how it works in the real world, lack of preparation, inadequate training and supervision as reasons for job dissatisfaction and turnover (Peterson, 2001, DHHS 1988, Feldman 2003). In Alaska some hospitals hire new nurse graduates for their ICU. Most report that new graduate nurses are not adequately prepared for work in the ICU and require at least a year of hospital experience.

The shortage remains. The problem then is, can we in Alaska better prepare new graduates for the hospital setting, particularly for the Intensive Care Unit which typically has one of the highest vacancy rates for hospital departments?

The Alaska Nurses Association, a professional group dedicated to advancing and supporting the profession of nursing, has requested a report on how hospitals are and can better prepare new graduates for work in a hospital setting. They requested a focus on the ICU because this department historically experiences the highest vacancy rate, and often the highest turnover rate. This report could also be useful to hospitals and nursing education programs who might have an interest in better preparing nurses for work in an ICU. Alaska has made giant strides in educating more nurses. The next step is to put them to work where they are needed.
Background and Conceptual Framework

This report will focus on current hiring and training practices utilized by a sample of Alaskan hospitals, a review of the relevant literature, examples of strategies employed by hospitals in other states and recommendations for hospitals to utilize in Alaska.

A brief examination of the Intensive Care Unit, Registered Nurse and the historical development of hospitals and the nursing profession will be presented to identify and establish trends which contribute to the current landscape.

The Intensive Care Unit

A definition of the Intensive Care Unit is provided in order to present a picture of the environment in which ICU nurses work. This department is characterized by its fast pace, high level of patient acuity, and constant demands for attention to acuity, characteristics which contribute to the difficulty recruiting ICU nurses and the difficulties in retaining them (American Association or Critical Care Nurses – AACN).

An intensive care unit, or ICU, is a specialized section of a hospital that provides comprehensive and continuous care for persons who are critically ill and who can benefit from treatment. Healthcare professionals who work in the ICU provide around-the-clock intensive monitoring and treatment. There are four recommended priorities that are used to determine admission to the ICU. These priorities include:

- Critically ill patients in a medically unstable state who require an intensive level of care (monitoring and treatment).
- Patients requiring intensive monitoring who may also require emergency interventions.
- Patients who are medically unstable or critically ill and who do not have much chance for recovery due to the severity of their illness or traumatic injury.
- Patients who are generally not eligible for ICU admission because they are not expected to survive. Patients in this fourth category require the approval of the director of the ICU program before admission.
Nursing care has an important role in an intensive care unit. The nurse's role usually includes clinical assessment, diagnosis, and an individualized plan of expected treatment outcomes for each patient (implementation of treatment and patient evaluation of results).(AACN)

RN: Registered Nurse

A Registered Nurse ("RN"), is a health care professional responsible for implementing the practice of nursing through the use of the nursing process (in concert with other health care professionals). Registered nurses work as patient advocates for the care and recovery of the sick and maintenance of the healthy. In their work as advocates for the patient, RNs ensure that the patient receives appropriate and professional care. RNs use the nursing process to assess, plan, implement, and evaluate nursing care of the sick and injured. RNs generally have more training than licensed practical nurses. (http://en.wikipedia.org/wiki/Registered_nurse) Registered nurses constitute the largest health care occupation, with 2.5 million jobs. About 59 percent of these jobs are in hospitals. (US Department of Labor, Bureau of labor statistics)

In the United States, there are three routes to initial licensure as a registered nurse. The shortest path (and the most widely utilized) is a two-year Associate of Science in Nursing, a two-year college degree referred to as an ADN; this is the most common initial preparation for licensure in the U.S. Another method is to attend a diploma program, which lasts approximately three years. Diploma programs are typically offered in or by hospitals. Students take between 30 and 60 credit hours in anatomy, physiology, microbiology, nutrition, chemistry, and other subjects at a college or university, then move on to intensive nursing classes. Until the 1960’s, most RNs in the US were initially educated in nursing by diploma programs. (Feldman, 2003))The third method of becoming an RN is to obtain a Bachelor of Science in Nursing, a four-year degree that also prepares nurses for graduate-level education. For the first two years in a BSN program, students usually obtain general education requirements in the same manner as ADN and diploma graduates; they spend the remaining time in nursing courses. Advocates for the ADN and diploma programs state that such programs have a more
"hands-on" approach to educating students, while the BSN is an academic degree that emphasizes research and nursing theory. Nursing schools must be accredited by either the National League of Nursing Accrediting Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE).

Completion of any one of these three educational routes allows a graduate nurse to take the NCLEX-RN, the test for licensure as a registered nurse, and is accepted by every state as an adequate indicator of minimum competency for a new graduate.

Controversy exists over the appropriate entry-level preparation of RNs. Some professional organizations believe the BSN should be the sole method of RN preparation and ADN graduates should be licensed as "technical nurses" to work under the supervision of BSN graduates. Others feel the hands-on skill of diploma and ADN graduates makes up for any deficiency in theoretical preparation. Regardless of this debate, it is highly unlikely that the BSN will become the standard for initial preparation any time soon, because of the nursing shortage and the lack of faculty to teach BSN students. (http://en.wikipedia.org/wiki/Registered_nurse)

Preparing Nurses for Work

Initially nursing was not a position which required training, nor was it a position of respect. Those who provided nursing care were considered low class servants at best. Florence Nightingale is considered to have established the beginning framework of the profession. Her methods and training design were the primary model for nurse training until the beginning of the 20th century. Nightingale’s primary focus was on the moral characteristics of her nurses, rather than the technical skills of a health care provider. Training nurses to be dedicated, selfless, morally irreproachable, and feminine was most important. Prior to World War II, most nurses worked in private homes. They received their training in Training Schools, many of which were modeled on Nightingale’s teachings; the emphasis on caring as opposed to curing (Malka, 2007, p.3-6).
World War II impacted the world of work in many ways. Health care and nursing were no exception. It is well documented that during the war, women stepped in to fill the jobs of men who were away at war. Many nurses developed significant medical skills during the war and served all over the world. At the end of the war, these women were expected to step back into their domestic roles, since there were now men to do the job. Nurses did not follow this trend. Following the war there was an increased demand for nurses. There were very few male nurses; most training schools would not accept men. And hospitals preferred female nurses because they cost less. Approximately one-third of all registered nurses of the time served in the war (Malka, 2007 p. 13).

After the war, two significant changes occurred that affected the field of nursing. With the increasing emphasis on science and technology, government funding and third party insurance, more medical care was being provided in hospitals. The majority of nurses no longer worked in private homes but rather in hospitals. The second change that impacted nursing was the GI bill: some of these nurses returning from the war took advantage of this assistance and attended college and university. To meet the growing demand for hospital nurses, hospitals trained their nurses in hospital diploma schools. Until the 1960’s, hospital diploma schools remained the primary method of training for hospital nurses. While there were 4 year baccalaureate nursing programs, only approximately 15% of nurses received their training in this way up through 1965. In the 1950’s a two year program, the Associate Degree in Nursing was developed as a way to “professionalize” nursing and to train additional nurses. The development of the ADN was in response to the post war nursing shortage. This new training model moved the majority of nursing students out of the hospital and into the educational setting. (Malka, 2007, p. 32-33, DHHS, 1988)

So now nurses had three routes into the nursing profession; a two year Associates degree, a three year hospital diploma or a four year baccalaureate degree. Controversy over which is the best preparation and what kind of education meets professional qualifications continues to this day. It is of note that each method of training grew out of 1) a recognition that there was a shortage of trained nurses, and 2) changes in how health
care is delivered. One other trend that occurred as nurse preparation moved from the hospital to the college is that student nurses spent less and less time in the hospital. “As nurses training evolved from a system of hospital service and an apprenticeship culture to a professional educational program, the costs of the training increased substantially and added to the controversy and tensions between the hospitals and the colleges. (Malka, 2007, p.33-34).

Nursing Shortage

Nursing shortages appear to have occurred cyclically since World War II; during the immediate post war period, the mid 60’s, early to mid 80’s and again at the beginning of this decade. In each instance reports of the shortage indicate similar factors: a change in how and where nursing care and medical care is provided, an increase in the complexity of medical technology requiring additional and more complex skills, an aging population and an increase in the number and type of employment opportunities for women and for nurses in particular. (Malka, 2007; Peterson, 2001; DHHS, 1988; Andrist, 2006, Jones, 1992)

As noted above, the first modern nursing shortage occurred post war and was related to an increase in hospital care. Medical care was moving from the home to the hospital. The current shortage is linked in part to care moving from hospitals to other settings. Like the other nursing shortages, the current shortage has roots in advances in medical technology requiring increasingly specialized skills, an increasingly aging population, and additional employment opportunities for nurses. (Malka, 2007; Peterson, 2001; DHHS, 1988; Andrist, 2006)

It is of note that there are now many opportunities for nurses outside of direct medical providers; nurses now have opportunities for employment with insurance companies, claims adjusters and policy organizations to name a few. These jobs are often attractive to older nurses who can continue in their field but without the physical demands and long hours of hospital work. This difference is noteworthy, particularly ICU’s, because of one
unique characteristic of the current shortage—the age of the current workforce is significantly higher than during previous shortages. (See graph 2) Due to population demographics, the large number of baby boomers at retirement age and the smaller number of workers to replace them. According to a Re-Licensure Survey UAA’s Nursing School and the Alaska State Board of Nursing, in 2002 74% of all licensed RN’s in Alaska were 41 years old or older. The average age of an Alaskan RN was 46. This age demographic has significant consequences in the ICU because the work load, pace and heavy lifting do not attract older nurses. And in Alaska, not only are our nurses growing older, but our older population is increasing rapidly as well. Rather than moving out of state at retirement age, many older Alaskans are now choosing to stay. This trend is increasing the demand for nurses and nursing care. (Fried, 2008)

**Graph 2: United States population by Age**

![United States population by Age](image)

**Literature Review**

A review of the relevant literature offers information about how hospitals nationwide are addressing shortages of nurses and how nurses are prepared for hospital work.

**Shortages**

Shortages of anything, whether they be strawberries or nurses, result from an imbalance in supply and demand. The current shortage is resulting from both a sharp increase in
demand, and a decrease in supply. (GAO report, HRSA, 2004, Fried, 2008)) Strategies for addressing the shortages have focused on both the demand and the supply side of the equation. Hospitals in Alaska and across the country, have employed both long term and short term strategies for solving the shortage of RNs.

Supply and Demand

On the supply side, strategies within the education system have focused on increasing the number of nurse graduates, increasing educational capacity, assisting financially and developing shorter, more technically focused degree and training programs. This strategy allowed for the development of the Licensed Practical Nurse (LPN) and the Certified Nursing Assistant (CAN), both now heavily relied upon nursing roles. A most recent emphasis on a national level has been to implement incentives for nurses to become nurse educators. There are currently many more applicants for nursing school than there is capacity to educate the. The primary impediment is the number of faculty available (RWJF 2005, GAO, May et al, 2006).

On the demands side of the equation, some tasks that RN’s used to perform that do not necessarily require their skill level have been assigned to employees other than RNs. Facilities have been looking at what exactly do they need their RN’s for and what jobs can be performed by other professionals.

Models of Training

The literature review offers four typical models for preparing new graduate nurses for work in the hospital: Orientation, Preceptorship, Mentoring and Residency. Sometimes these methods are used alone, sometimes in combination.

Orientation: orientation is typically focused on the policies and procedures of the institution and or unit. It is an on the job model of training based on a teaching model of
instruction. “The relationship is primarily one way, from teacher to student, often with compensating evaluation and corrective measures, and typically some general conversational exchanges for clarity. (Flynn, p. 2)” The emphasis is on the exchange of specific information about specific practices and skills. Orientations are typically on the shorter end of the preparation continuum, lasting anywhere from 4-12 weeks. The literature review indicates that recently, in response to staffing shortages and in an effort to recruit and retain nurses, hospitals with orientation programs are lengthening their orientations and adding additional components (Nelson, Thomason, 2006)

**Mentoring:** definitions of mentoring vary widely. As a general rule, the concept of mentoring is a relationship that extends over a period of time, with a focus on role modeling, and guiding. The emphasis is on the relational aspects as opposed to learning specific skills or materials. Mentoring is a term used to refer to the fostering of a career rather than on the specifics of a particular job. (Flynn, 1997,p. 3; O’Malley, et al, 2000, p. 46; Vance, 1998, p. 3-8) While some mentoring programs have definitive time boundaries, often the relationship can last over the careers of those involved and longer. There is a significant amount of literature in the business world that advises organizations on how to establish formal mentoring programs. In the nursing profession, the literature indicates that mentoring relationships are more typically informally established through a voluntary informal agreement between a less experienced and a more experienced colleague. Mentoring is rarely if ever used as a stand alone preparation model for nurses.

**Preceptorship:** Preceptorships have a long standing history within the nursing profession. Preceptorships tend to be a one to one relationship, like mentoring but the emphasis is on the transference of specific information and skills. Preceptorships usually last for a specifically defined period of time, anywhere from 3 months to a year. This model of training tends to have definitive and measurable goals with specific learning content and often a published curriculum. The more established preceptor programs will have specific training for those serving as preceptors, and the preceptors will receive additional reimbursement for their additional work. Preceptorship is the most common
type of nurse training and is most often combined with Orientation.(Flynn, 1997, OMalley, 2000)

**Residency:** Nursing residency programs are the most recently implemented method of preparing nurses for work in the hospital. Nurse Residency Program (NRP) structures vary significantly but in general are defined by a partnership between academia and practice (Herdrich & Lindsay, 2006) They are longer term programs developed in partnership between a college and a University, and oftentimes some other governmental or non profit organization to assist in implementation. These programs typically run from 6 months to one year and are designed for nurses who are completing or have just completed their course of study and are ready to take their licensing test or have just passed their licensing test. Residency programs are a paid employment position in conjunction with an educational classroom component. At this time, the literature suggest that most residency costs are born by the hospitals. There are residency programs for most environments an RN might work in including Public Health, Med/Surg, NICU, Cardiac Critical Care, ER, OR and the ICU.
Methodology

Interviews with key informants provided a framework for the background and methodology. A standard survey instrument was developed based on information requested by the Alaska Nurses Association, interviews with key informants, and previous surveys and evaluations of orientation and training programs for nurses entering the ICU (cite surveys). A key question of interest to the Alaska Nurse’s Association is how or whether these institutions employ new graduate nurses in the ICU, and if so, how do they prepare them for this work. Also of interest; if they do not hire new graduate nurses in their ICU, why not? Information was also gathered from public documents, and hospital employment websites.

The Survey

These surveys were administered to key staff in the hospitals in the state that have Intensive Care Units. The researcher spoke over the phone with Nurse Executives, Nurse Managers, Unit Directors, Nurse educators and Human Resource personnel. Reaching the most informed person was extremely time consuming. However speaking directly with these key personnel also offered specific details about how and why hiring and training programs were in place. The researcher attempted to administer the survey at the ten hospitals with adult critical care units. Some of these hospitals have other intensive or critical care units such as a Pediatric Critical Care (PICU) or Neonatal Intensive Care (NICU). These units were not included in the survey. Staff, including Nurse Executives, ICU Nurse Managers, and Human Resource Managers were contacted to gather survey information. Eight of the ten hospitals contacted responded.

It is of importance to note that due to the demographics and physical environment of the state, the size of the hospitals, and the skills required of RN’s in the various hospitals vastly differ.
Table 1. Alaskan Hospitals Surveyed

<table>
<thead>
<tr>
<th>Providence Hospital</th>
<th>Regional Hospital</th>
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<tbody>
<tr>
<td>Elmendorf Hospital</td>
<td>St Elias Specialty Hospital</td>
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<tr>
<td>Alaska Native Hospital</td>
<td>Ketchikan General hospital</td>
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<tr>
<td>Central Peninsula Hospital</td>
<td>Fairbanks Memorial Hospital</td>
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<tr>
<td>Bethel</td>
<td>Mat Su Regional Medical Center</td>
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**Hiring New Nurse Graduates**

Of the eight hospitals that responded, two hire new graduate nurses in their ICU. Both of these institutions had long standing relationships with the University of Alaska to hire new graduates. Both offered clinical rotation sites for students as well. One was a small rural hospital, one a mid size urban facility. Both facilities offered structured orientation and training programs of between 12 and 19 weeks. In both of these facilities, new graduates were matched with Preceptors. Both programs included a structured learning curriculum. One included formal classroom training. Assessment of completion of training took place through observation, and review of skills checklists. Costs estimates of training these nurses ranged from $20,000 to approximately $65,000 per nurse. Vacancy rates were between 16% and 30%. One of these hospitals relied heavily on traveling nurses due to the extreme seasonal variation in demand for their services. The other hospital reported that they rarely needed to depend on temporary or traveling nurses due to their employment environment, their relationship with the university and their wages. The respondent at this hospital reported that the unit had in the past hired almost solely new nurse graduates. However, the lack of experienced nurses presented real safety issues. They currently only bring on up to two new nurse graduates at a time. This researcher happened to be speaking with a student who worked in the unit as a tech. She reported independently that she had experienced difficulties on that unit when they had only new nurses due to their relative inexperience. Their comments speak to the real need for the appropriate training, mentoring and supervision required.
Table 2. Survey Instrument

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<tr>
<td>1)</td>
<td>How many new nurse graduates do you hire in your ICU per year?</td>
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<td>0 1-5 6-10</td>
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<td>2)</td>
<td>What are the minimum requirements you look for in an applicant for the ICU?</td>
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<td>Graduated from a four year program</td>
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<td>1-3 years hospital experience</td>
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<td>3-5 years hospital experience</td>
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<td>More than 5 years hospital experience</td>
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<td>Other:____________________</td>
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<td>3)</td>
<td>What is the training process for a new ICU nurse?</td>
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<td>Orientation to the unit</td>
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<td></td>
<td>Matching with a preceptor</td>
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<td>If preceptors are used:</td>
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<td>Do the Preceptors receive training?</td>
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<td>How many weeks?</td>
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<td>Who provides the training?</td>
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<td>Do Preceptors receive additional compensation for precepting?</td>
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<td>Matching with a mentor</td>
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<td>If Mentors are used:</td>
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<td>Do the Mentors receive training?</td>
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<td>How many weeks?</td>
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<td>Who provides the training?</td>
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<td>Classroom Training</td>
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<td>Does your training include formal classroom training?</td>
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<td>If yes, how many hours?</td>
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<td>Is any computerized training included?</td>
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<td>If Yes, describe.</td>
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<td>Assessment</td>
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<td>Do you test to assess knowledge at any time during the training?</td>
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<td>How do you assess that a nurse has completed orientation?</td>
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<td>4)</td>
<td>Number of weeks of training for new ICU nurse?</td>
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<tr>
<td></td>
<td>None</td>
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<td>1-6 weeks</td>
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<td>7-12 weeks</td>
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<td>13-24 weeks</td>
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<td>Longer than 24 weeks</td>
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<td>5)</td>
<td>What is your estimated cost for training a new ICU nurse?</td>
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<td>None</td>
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<td>$1-10,000</td>
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<td>More than $40,000</td>
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<td>6)</td>
<td>Do you partner with any other organization to provide training to new ICU nurses?</td>
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<td>a. If Yes-who?</td>
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<td></td>
<td>b. If No-Would you consider doing so.</td>
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<td>7)</td>
<td>What has the vacancy rate been in your ICU for the past year?</td>
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<td></td>
<td>0-5% 6-10% 11-15% 16-20% 21-25% Greater than 25%</td>
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<td>8)</td>
<td>What is the approximate number of RN vacancies on your ICU currently?</td>
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<td></td>
<td>0-3 4-6 7-10 Greater than 10</td>
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<tr>
<td>9)</td>
<td>What hiring strategies do you use to bring in nurses for your ICU?</td>
</tr>
<tr>
<td></td>
<td>Hiring temporary/traveling nurses</td>
</tr>
<tr>
<td></td>
<td>Hiring new nurses</td>
</tr>
<tr>
<td></td>
<td>Recruiting experienced nurses from other states</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>
Not Hiring New Nurse Graduates

The six hospitals who do not hire new graduate nurses into their ICU typically required, in addition to a degree from an accredited institution and a RN License, between 1 to 3 years of hospital experience. The larger hospitals with higher acuity levels at times also required experience in critical care. There were two reasons given for not hiring new graduate nurses directly into the ICU. The larger hospitals reported that new graduate nurses needed to focus on basic assessment and nursing skills before being ready to handle the pace and complexity of the ICU unit. One Nurse Executive pointed out that her unit would consider a new nurse graduate if the candidate had completed one of her clinicals in their ICU, thus having some experience in the department. Her experience was that the new nurses had rarely, if ever, done so. The smaller hospitals who did not hire new nurse graduates reported that they did not do so because the amount and type of care they provided in their ICU would not provide enough opportunities to properly prepare a new nurse graduate for the ICU.

Hospitals that did not hire new nurse graduates also provided formal orientation and training programs that ranged in length from 2 to 24 weeks. Five of the six have a formal Precepting program. Four of these five provided specific preceptor training, usually a 2-3 day workshop. Three of the five offering preceptors provided additional compensation to the preceptors. None of the programs offered formal mentoring support. None of these programs included formal classroom time. All of the training programs included an assessment component at the end of the training. The assessment usually consisted of observation by the preceptor or nurse educator during shifts and completing skills and competency checklists. Cost estimates for training the new ICU nurses ranged from $5000 to approximately $55,000. Included in these cost estimates were the salary of the nurse, and the additional cost of the preceptor during the training period. The training of shortest duration and cost occurred in an environment in which the new nurses were extremely experienced combat nurses who were coming from and going to active duty service.
Vacancy Rates

Vacancy rates for these hospitals ranged from 0-25%. One of these hospitals was brand new, and although it did have an ICU, the organization was not hiring for specific departments, and could not provide vacancy rates for the department. Another hospital had expanded its ICU capacity by more than 50% in the past two years.

Each of the respondents in this group discussed a focus on improving the work environment as a recruitment and retention strategy. Respondents mentioned decreasing the use of temporary or traveling nurses (3), increasing the number of staff (4), the use of clinical nurse managers (2), increasing training opportunities (3), and not sending permanent RN’s home when census dropped (3). It is interesting to note that one of the reasons given for decreasing the use of traveling or temporary nurses is the difficult finding experienced nurses even within this traditionally rich pool (2). Three of the six respondents reported that they expected to have higher vacancy rates in the future because of the age of their workforce and the competition for experienced nurses.

All of these hospitals, except for the new hospital for obvious reasons, reported that they did hire new nurse graduates, but simply did not hire them into the adult intensive care units. One of the respondents reported that her institution had developed training opportunities for students and new nurse graduates in several departments including family practice, adult acute care, and progressive care.

Table 3. Hospital Demographic data

<table>
<thead>
<tr>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of staffed hospital beds</td>
<td>25-364</td>
</tr>
<tr>
<td>Range of beds in ICU</td>
<td>4-28</td>
</tr>
</tbody>
</table>

Table 4. Length of training/ Cost of Training for ICU Nurses in Alaska
The cost estimates were just that, estimates. It is worth mentioning that while it is expensive to train a new ICU nurse, the cost to replace an ICU nurse has been estimated at between $62,000 and $67,000 (Jones 2007, Poynton et al, 2007).

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced RN</td>
<td>2 - 24 weeks</td>
<td>$5,000 - $55,000</td>
</tr>
<tr>
<td>New Nurse Graduate</td>
<td>12 - 19 weeks</td>
<td>$20,000 - $65,000</td>
</tr>
</tbody>
</table>
Policy Options

Like many employers today, hospitals are having to develop new and creative strategies for hiring and retaining qualified employees. As identified earlier, the problem of hiring enough qualified nurses is not limited to our state or to our ICU’s. Hospitals across the country are experiencing the same shortages and limitations. They are of course developing strategies to solve the problem. These strategies can be identified as short term or long term strategies. While Alaska’s unique size, geography and demographics present some challenges, other places in the country experience some of the same challenges and may provide some solutions.

Short Term Strategies

Short term strategies employed by the hospitals include offering voluntary overtime, and/or requiring mandatory overtime to the RN’s they already have. Short term strategies also include hiring temporary or traveling nurses, recruiting nurses from out of state and other countries, offering referral, hiring and even interviewing bonuses, and increasing salaries. Short term strategies can allow hospitals to meet immediate needs but offer no hope for a sustainable supply of qualified RN’s. Additionally, these strategies are becoming more cost prohibitive as the cost of hiring temporary nurses increases, and their hiring typically cause retention problems. The literature points out, and interviews with nursing professionals here in Alaska support the fact that these costs are not limited to the salary of the RN’s hired, but include the placement costs of the agency, the relocation costs, the living allowances and the constant orientation costs. Additionally, core permanent and long term staff resent the perks that the temporary or more recently hired RN’s receive. These strategies tend to increase turnover. Often the tours of these nurses can be as short as 13 weeks. Costs that are harder to track, and on which there is less research, can include negative impact on care and higher turnover rates for permanent hires due to inconsistent co workers. (Jones & Gates, 2007, May et al, 2006, Feldman, 2003)
Long Term Strategies

Long term strategies to solve the nursing shortage include providing financial assistance for, and investments in nurse education, both by offering assistance for nursing degrees and by offering incentives for experienced nurses to become nurse educators. Improving the work environment is another long term strategy and includes action such as increased nurse staffing, redesigning work spaces to be less physically demanding and offering flexible and shorter work schedules. Additional long term efforts include a focus on retention including orientation, training and ongoing support for nurses, serving as clinical sites, and paying for advanced certification. (May et al, RWJF 2005, GAO report, Nelson, 2006). Long term strategies include developing new models of teaching students and new ways to deliver clinical skills instruction. Hospitals are becoming clinical rotation sites in an effort to attract nursing student before they graduate, and offering externships, internships, fellowships and residency programs to students as a way of bringing them into their organizations early on in their career. Some hospitals are sending representatives into high school and even elementary schools to develop interest in the profession among younger students (RWJF, 2005). Hospitals are developing partnerships not only with educational institutions, but also with municipal, state and local government departments to develop comprehensive workforce development plans. (RWJF, 2005, Jones & Gates, 2007, May et al, 2006, American Federation of Teachers, 2005Feldman, 2003).

Most recent recommendations emphasize long term strategies, and focus on recruitment and retention in addition to financial support for nursing education and nursing faculty (Feldman 2003). All recommendations emphasize collaboration and partnerships between educational facilities, hospitals and state agencies. Alaska has already developed successful partnerships to increase the number of nurse graduates, and has begun to focus on increasing the number of nurse educators and faculty. (GAO report, HRSA 2004, May et al, 2006; Thomason, 2006)
Wages, although typically an important consideration in discussing both supply and demand as well as strategies for reducing hiring shortages, have not been a large part of the discussion this time around. The literature indicates that the barriers to entry at this time are at the education and training level, with limited infrastructure to increase supply. The 2004 HRSA report did provide a projection based on wage increases of +1, +2 and +3% relative to other occupations. According to their projections if nursing wages were to increase by +3% over other occupations annually (a cumulative wage growth of 81%) the shortage would be 100,000 nurses rather that just under 1 million. This projection assumed that educational capacity could meet the demand. One other point that has been made in the HRSA report and elsewhere is that an increase in wages could have a short term impact by encouraging licensed RN’s who are not working to return to the work force and older RN’s to delay retirement. According to the Alaska Re-Licensure Survey, in 2002, the most recent survey, 98% of RN’s licensed in Alaska were working, and 70% were working full time, leaving the state with a small pool to draw from. (Smith, 2002).

*Orientation, Training and Onboarding*

Significant among the longer term recruitment and retention strategies identified in the literature are recommendations that facilities offer and advertise their strong training and orientation programs. In the Human Resources field there is lately significant research and discussion of the role the “onboarding process” plays in hiring and retention. Studies indicate that in general, the most turnover occurs in the first few months on the job. Nursing research indicates that this turnover statistic is true for nursing as well. The percentage of new graduate nurses who leave a healthcare organization within the first year of employment is estimated at 35 percent to 60 percent (Poynton, et al, 2007 p. 385). This turnover has significant costs. A 2004 economic analysis published in the Journal of Nursing Administration estimated that the dollar cost of turnover per registered nurse at one 600-bed acute care hospital is $62,100 to $67,100 (Jones 2007, Poynton et al, 2007, p. 385) It is of interest to note the training costs for new nurse graduates as reported by respondents is significantly less. And this is only the financial cost. Other studies have
documented some of the costs in terms of quality of care, but these costs are harder to capture. (NQF 2007),

Onboarding is typically used interchangeably with the term orientation, the difference being that onboarding refers not only to the mastery of specific professional skills, policies and procedures, but also to learning the work culture and developing appropriate work relationships with coworkers, supervisors and the organization (Tai & Lockwood, 2006, Overman, 2005). According to studies of orientation, onboarding and new employee training, successful strategies:

1) involved experienced organization members in the socialization process as role models or mentors; 2) provided newcomers with positive feedback as they adjust to the new environment; 3) structured orientation activities to allow newcomers to experience the activities together; and 4) provided clear information about the stages of socialization process. (TAI & Lockwood, 2006)

It is of note that the nursing training models of Precepting and Residency include these characteristics.

On average, the time for new external hires to achieve full productivity ranged from eight weeks for clerical jobs to 20 weeks for professionals to more than 26 weeks for executives.


When this project was first proposed, several local professionals in the field of medicine and academia indicated that using new nurses in the ICU was not feasible, and expressed surprise that anyone would consider this strategy. The survey responses indicate that a significant number of key hospital personnel also reject using new nurse graduates in the ICU and do not see it as a feasible strategy for filling their vacancies. Their professional
experience leads them to believe that new nurse graduates must develop their basic nursing skills prior to entering the fast paced and demanding work of the ICU.

The literature and research indicates that many hospitals across the country are using new nurse graduates in their Intensive Care Units (as well as in other specialty units). Hospitals are doing so in a conscious effort to address shortages, and improve recruiting and retention. According to a national survey on ICU nursing and post orientation practices, “most responding hospitals in this survey indicated that they were actively hiring and training newly licensed registered nurses into the critical care setting (Thomason, 2006, p. 237).” Hospitals bringing new nurses into the critical care setting are relying on the correct training to adequately prepare these new nurses. These programs sometimes start during the students’ final year of preparation, with an externship or clinical rotation in critical care. Training programs for new nurse grads can range from 10 week internships to year long residency programs. The type of training program is often determined by the size of the organization, their affiliation or lack of with a university system, the level of acuity provided for by the institution, and the size of the community in which the organization is located. Some examples, In Texas, hospitals have joined together to provide critical care training courses jointly. Also in Texas, a number of hospitals created a critical care consortium to improve training and share educators. (Nelson, 2006) Florida Hospital offers critical care residencies in its ten hospitals. An internet search of ICU training for new nurse graduates brings up literally thousands of sites describing training programs in ICU’s for new nurses.

The Joint Commission on Accreditation of health Care Organizations, the Robert wood Johnson Foundation and other national organizations have identified Nurse Residency programs as “a key strategy in the recruitment and retention of graduate nurses (Herdrich & Lindsay, 2006).” Studies indicate that nurse residency programs have been shown to improve satisfaction and enhance the retention of new graduate nurses, offering one solution for hospital executives, administrators, and managers searching for innovative ways to address nursing staff shortages. An evaluation of the nurse residency program sponsored by the American Association of Colleges of Nursing and the University HealthSystem Consortium indicates
• Nurse residency program graduates expressed greater confidence, competence and mastery of their jobs over the course of the residency program and an increase in their perceived ability to organize and prioritize.

• Nurse residency program graduates remained in their jobs for one year at significantly higher rates than those of first-year nurses nationally. The one-year retention rate of residents who entered the program before October 2003 was 87 percent (89 percent after excluding residents who failed the nurse licensing exams). In contrast, not quite 50 percent of first-year nurses remain in their job after one year.

• On average, residents rated their own professional growth as a three on a four-point scale. Forty percent of residents rated their growth as a four.

• The residents provided a positive evaluation of the nurse residency program in the areas of recruitment and welcome to their workplace institution, the program goals, their views of the program and the program curriculum and faculty. Additionally, the residents' open-ended comments were primarily positive with negative comments coming mostly from residents in specialty areas, such as operating room nurses, who perceived many of the residency classes as less applicable to their specialty.

• Residents were less satisfied with their job at the end of the program than at the beginning. This finding is not unexpected, according to the project director, because the residents ivory-tower view at program entry is likely to be seriously jolted when they face the reality of their professional world. However, when data collected six months after graduation were compared with those after 12 months, there was no significant difference in job satisfaction, suggesting the initial decrease of job satisfaction in early residency did not continue. (www.rwjf.org/reports/grr/049929.htm, p.3)
Recommendations

The survey demonstrates that Alaska is implementing many of the same short term and long term solutions to solving the problem of meeting its nursing demand. Hospital ICU personnel reported that they have utilized wage increases, bonuses, and hiring temporary workers. Voluntary and mandatory overtime has recently been the topic of heated debate in the legislature. The survey results also indicate that among respondents, the focus had shifted to longer term strategies of permanent hiring, increased staffing, and improved work environment. The University and the hospitals have already established an effective partnership to increase access to nursing education and are now focusing on increasing capacity to develop nurse educators. A bill was recently introduced in the legislature to provide increased financial assistance to those attending nursing school (among other professions experiencing shortages of workers). Two of the hospitals surveyed utilize a small number of new nurse graduates in their ICU’s. One hospital is exploring the possibility of implementing externships and internships for students in the ICU, and has considered a Nurse Residency Program. However, the majority of Alaskan hospitals have not adequately explored utilizing new nurse graduates in their ICU’s, nor have they explored how increased training programs can assist them in doing so.

Based on the current educational and economic environment and the predicted nursing shortage, Alaskan hospital need to consider hiring new graduate nurses in their ICU’s as a long term strategy for closing their nursing gap. The Alaskan community the University and Alaskan hospitals need to explore the following options in order to bring new nurse graduates into the ICU.

- Providing more opportunities for clinical rotations in the Critical Care Unit; One Nurse Executive indicated that she could consider new nurse applicants if they completed at least one clinical rotation in a critical care unit.
- Increase the number of externships and internships in critical care; this is a proven training, recruiting and retention tool in the profession.
- Partner with the university to develop a nurse residency program for new graduate nurses; recent studies indicate that a Critical Care Nurse residency program
develops more skilled RN’s, is a draw for new grads, and significantly decreases turnover.

- Develop partnerships that include the State and local workforce development organizations, health care providers, and policy organizations to implement long term strategies to address nursing shortages on a statewide basis. Smaller communities and hospitals face greater challenges in addressing health care access shortages. These kind of partnerships help share the talent and the costs of meeting community nursing needs.

**Challenges**

There are, of course, challenges to implementing these recommendations, not the least of which is cost. One internal challenge noted by some of the nurses and managers is the hospital budgeting process in which each department has its own budget and which prevents departments from sharing training costs and resources. However, developing partnerships with state workforce development organizations may open funding streams. These hospitals tend to compete rather than collaborate with one another for staff. Two of the hospitals do have training partnerships with other hospitals both in state and out of state. Several others said that they would be open to partnering with other health care providers if necessary; they did not tend to see the need.

It is worth noting that some of these recommendations have been implemented in these hospitals in other specialty programs. And although Alaska does have unique characteristics, we could benefit from strategies employed elsewhere and tailored to our communities. As one respondent reported, training new graduate nurses “requires a sustained process of orientation and training on the part of the organization.” It is not that it can’t be done, as other states and hospitals have amply demonstrated. It is, however, a matter of harnessing the collective capacity of the state, the University and the health care providers to get it done.
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